

431.02  
06/29/2000  
Rev. 07

## ENGINEERING DESIGN FILE

Functional File No. \_\_\_\_\_  
EDF No. 1542  
Page 72 of 81

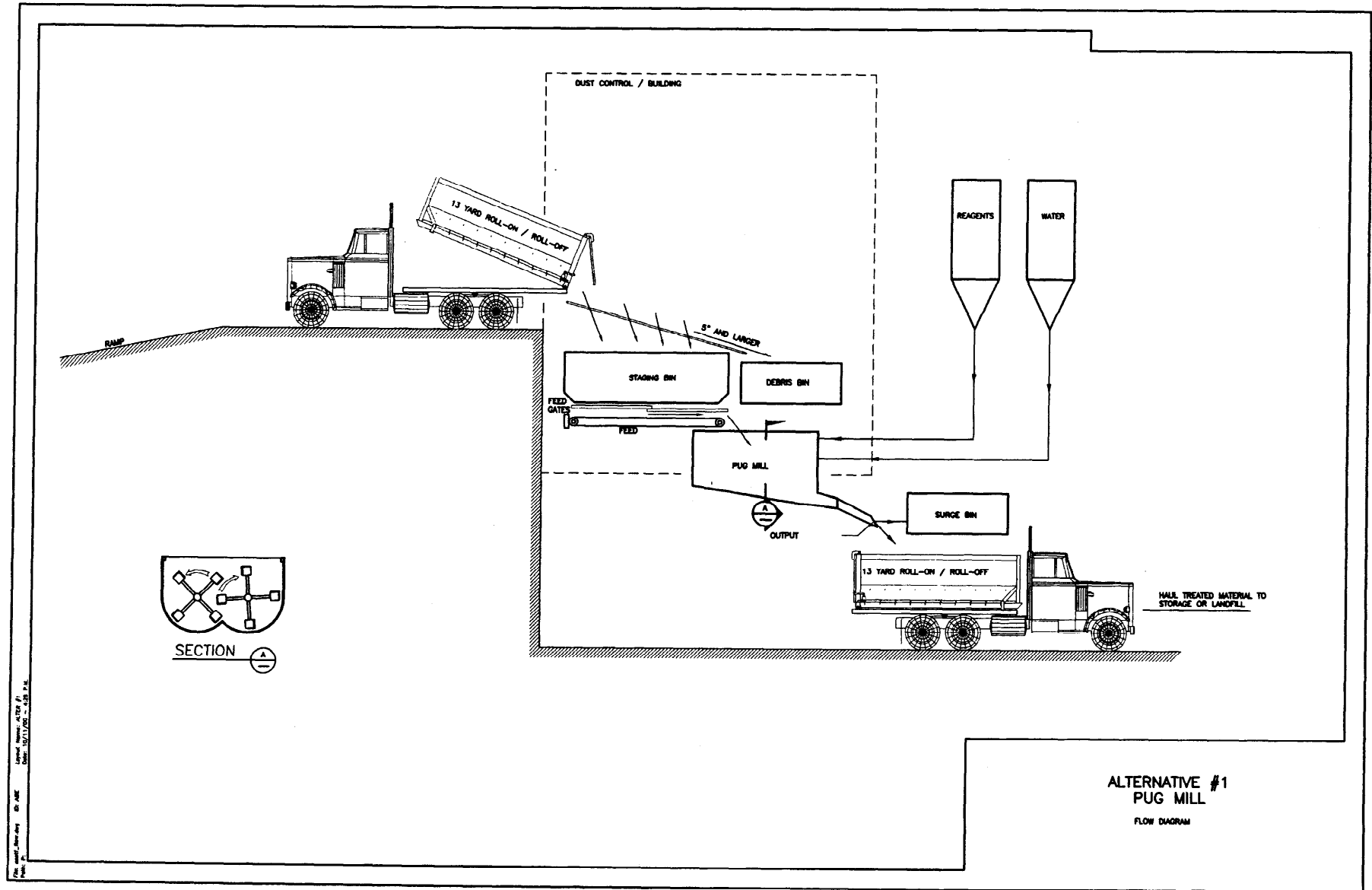
### ATTACHMENT #1

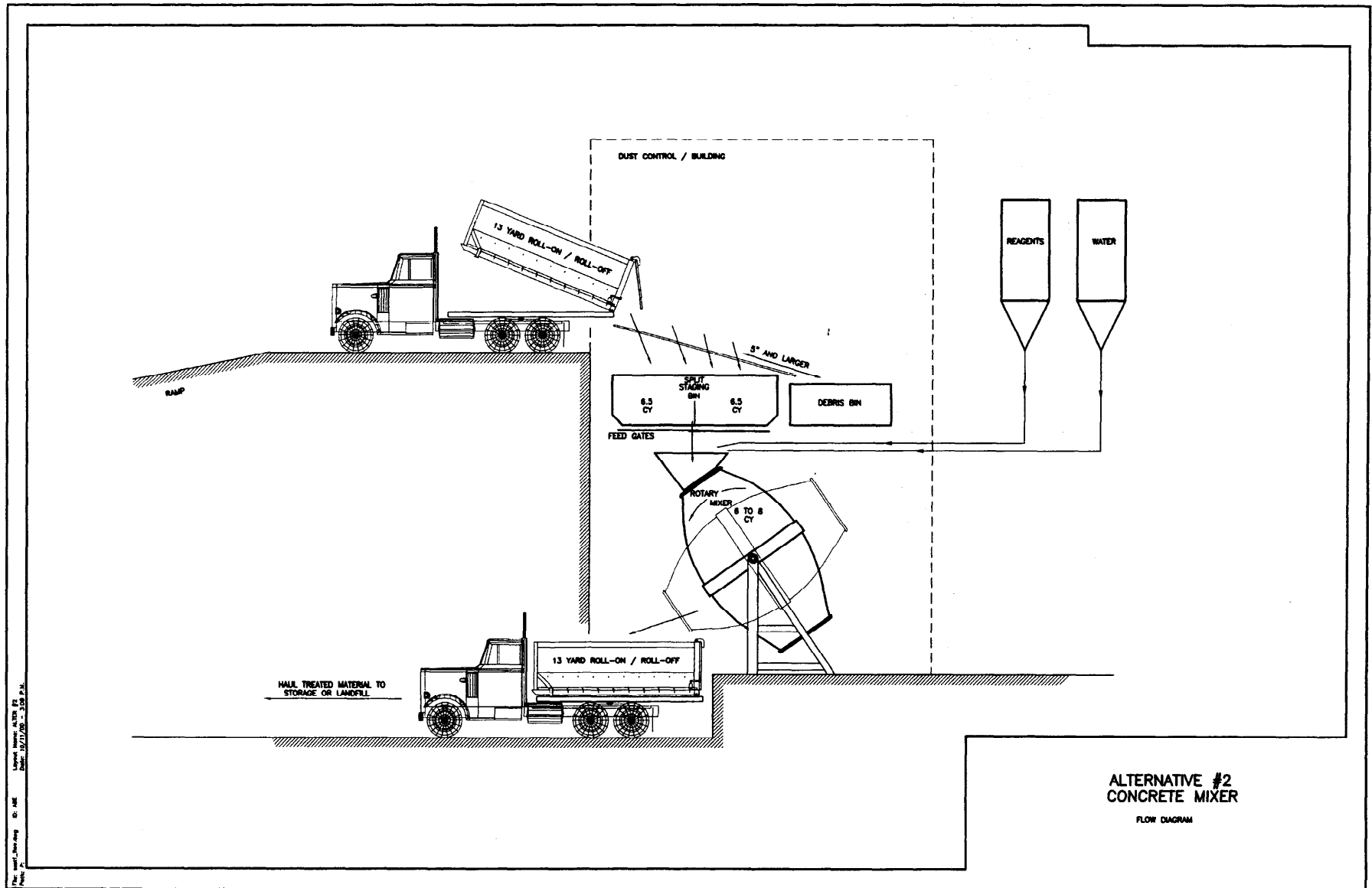
#### Soils Stabilization Treatment Alternative Sketches

431.02  
06/29/2000  
Rev. 07

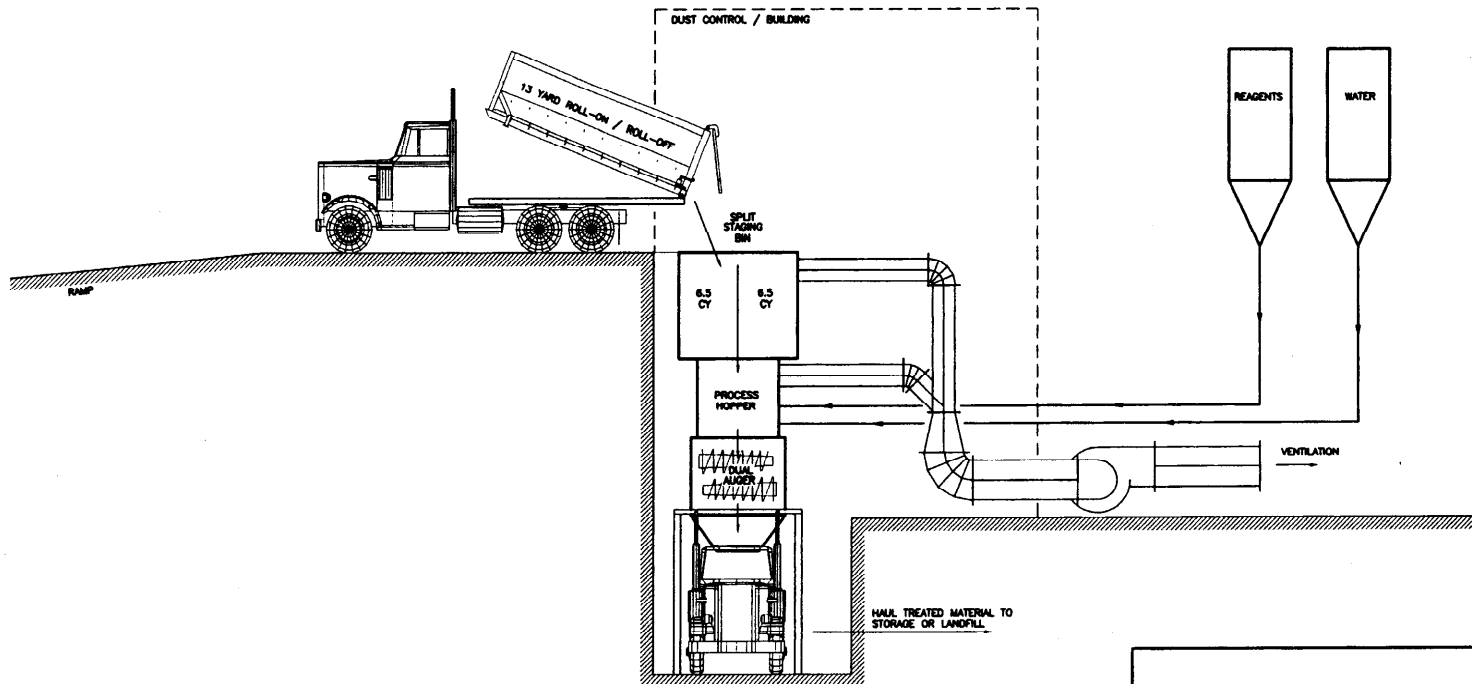
## ENGINEERING DESIGN FILE

Functional File No. \_\_\_\_\_  
EDF No. 1542  
Page 73 of 81

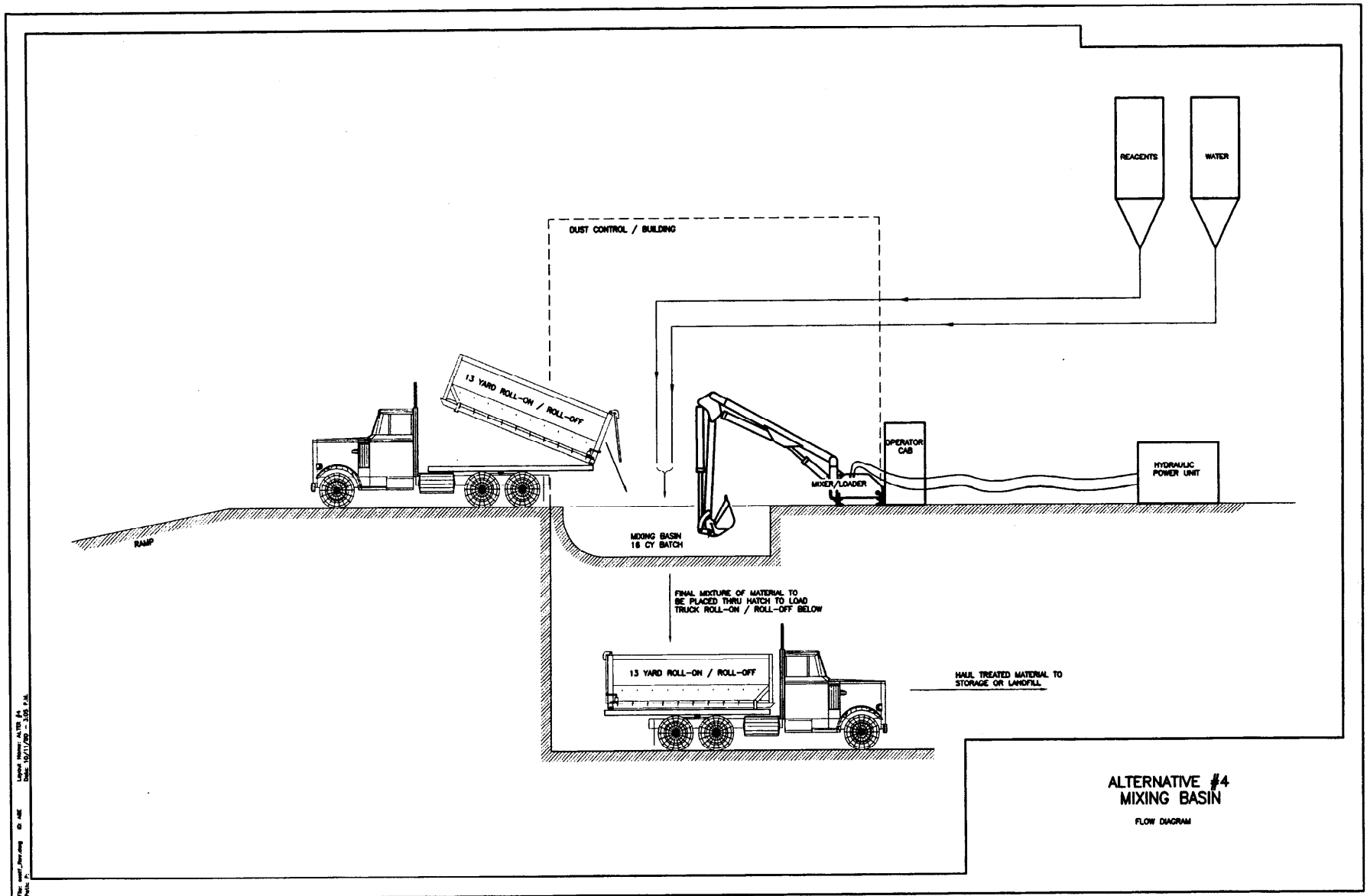




Functional File No. \_\_\_\_\_  
EDF No. 1542  
Page 75 of 81



ALTERNATIVE #3  
KOMAR SHREADER/MIXER  
FLOW DIAGRAM



## ATTACHMENT #2

### Soils Stabilization Treatment Alternative

### Rough Order of Magnitude Cost Estimates

- I. **SCOPE OF WORK:** *Brief description of the proposed project.*  
This part of the facility is to provide treatment to 35,000 cy of material over a 3 year period. This study is to determine the costs for 4 options.
1. Pug Mill mixing
  2. Concrete mixing
  3. Shredder/Mixer
  4. Backhoe with mixing basin
- II. **BASIS OF THE ESTIMATE:** *Drawings, Design Report, Engineers Notes and/or other documentation upon which the estimate is originated.*
- A. Process flow diagrams
  - B. Conversations with design engineers
  - C. R. S. Means Construction Costs
  - D. Richardson Estimating Standards
  - E. Cat Handbook
  - F. Blue Book Rental Rates
- III. **ASSUMPTIONS:** *Conditions statements accepted or supposed true without proof of demonstration. An assumption has a direct impact on total estimated cost.*
- A. Admixture handling will be the same for all options.
  - B. HVAC will be the same for all options.
  - C. Raw material delivery and finish product removal will be the same for all options.
  - D. Two operators and one HP will be required to operate any one of the options.
  - E. Plant input will be 13 cy per hour.
  - F. Plant output will be 16 cy per hour.
  - G. Total volume to be processed will be 35,000 cy.
  - H. Plant operations will be 10 hours per day, 150 days per year (9 months), and 3 years.
  - I. No costs have been included for electrical consumption.
  - J. D&D for all options will be very similar.
  - K. No costs have been included for utilities.
- IV. **CONTINGENCY GUIDELINE IMPLEMENTATION:** *The percentage used for contingency as determined by the contingency allowance guidelines can be altered to reflect the type of construction and conditions that may impact the total estimated cost.*
- A. A 30% contingency has been added to the total because the estimate is a "Rough Order of Magnitude" and very little design was done on the options.
- V. **OTHER COMMENTS/CONCERNS SPECIFIC TO THE ESTIMATE**  
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ENGINEERING DESIGN FILE

**Option 1 - Pug Mill**

Date:

Est. By: JCG

capital costs

Description	Quan	UM	Direct costs									
			Labor		Material		Equipment		Supplies		Total	
			UP	Total	UP	Total	UP	Total	UP	Total	UP	Total
Excavation	1500	cy	0.8	\$1,200	0	\$0	1.2	\$1,800	0	\$0	2.00	\$3,000
Backfill	1500	cy	8.95	\$13,425	0	\$0	4.2	\$6,300	0	\$0	13.15	\$19,725
Concrete	750	cy	120	\$90,000	150	\$112,500	20	\$15,000	30	\$22,500	320.00	\$240,000
Structural Steel	40	tn	360	\$14,400	1000	\$40,000	80	\$3,200	20	\$800	1,460.00	\$58,400
Siding	8000	sf	1.75	\$14,000	2.5	\$20,000	0.75	\$6,000	0	\$0	5.00	\$40,000
Scalping Screen	1	ea	5000	\$5,000	145000	\$145,000	500	\$500	0	\$0	150,500.00	\$150,500
40tn Bin	1	ea	2000	\$2,000	29700	\$29,700	1000	\$1,000	0	\$0	32,700.00	\$32,700
Feeder	1	ea	1000	\$1,000	10000	\$10,000	500	\$500	0	\$0	11,500.00	\$11,500
Pug Mill	1	ea	15000	\$15,000	200000	\$200,000	5000	\$5,000	0	\$0	220,000.00	\$220,000
20tn Bin	1	ea	1500	\$1,500	24300	\$24,300	1000	\$1,000	0	\$0	26,800.00	\$26,800
DCS System	1		5000	\$5,000	30000	\$30,000	0	\$0	0	\$0	35,000.00	\$35,000
Electrical Lights	26	ea	400	\$10,400	600	\$15,600	0	\$0	0	\$0	1,000.00	\$26,000
<b>TOTAL</b>	<b>0</b>			<b>\$172,925</b>		<b>\$627,100</b>		<b>\$40,300</b>		<b>\$23,300</b>		<b>\$863,625</b>

**Total Construction with Contingency**

**\$1,209,075**

Three year O&M Cos      4500 hr      12.5      \$56,250

12.5      \$56,250

\$112,500

431.02  
06/29/2000  
Rev. 07

# ENGINEERING DESIGN FILE

Functional File No. \_\_\_\_\_  
EDF No. 1542  
Page 79 of 81

Option 2 - Cement Mixer												Date:	Est. By: JCG
Description	Quan	UM	Direct costs										
			Labor		Material		Equipment		Supplies		Total		
			UP	Total	UP	Total	UP	Total	UP	Total	UP	Total	
Excavation	1200	cy	0.8	\$960	0	\$0	1.2	\$1,440	0	\$0	2.00	\$2,400	
Backfill	1200	cy	8.95	\$10,740	0	\$0	4.2	\$5,040	0	\$0	13.15	\$15,780	
Concrete	600	cy	120	\$72,000	150	\$90,000	20	\$12,000	30	\$18,000	320.00	\$192,000	
Structural Steel	25	tn	360	\$9,000	1000	\$25,000	80	\$2,000	20	\$500	1,460.00	\$36,500	
Siding	6500	sf	1.75	\$11,375	2.5	\$16,250	0.75	\$4,875	0	\$0	5.00	\$32,500	
Scalping Screen	1	ea	5000	\$5,000	145000	\$145,000	500	\$500	0	\$0	150,500.00	\$150,500	
40tn Bin	1	ea	2000	\$2,000	29700	\$29,700	1000	\$1,000	0	\$0	32,700.00	\$32,700	
Mixer	1	ea	5000	\$5,000	160000	\$160,000	1000	\$1,000	0	\$0	166,000.00	\$166,000	
DCS System	1		5000	\$5,000	30000	\$30,000	0	\$0	0	\$0	35,000.00	\$35,000	
Electrical Lights	20	ea	400	\$8,000	600	\$12,000	0	\$0	0	\$0	1,000.00	\$20,000	
TOTAL	0			\$129,075		\$507,950		\$27,855		\$18,500		\$683,380	
Total Construction with Contingency												\$956,732	
Three year O&M Cos	4500	hr	16.5	\$74,250					16.5	\$74,250		\$148,500	



ENGINEERING DESIGN FILE

**Option 3 - Komar Shredder-Mixer**

Date:

Est. By: JCG

Description	Quan	UM	Direct costs									
			Labor		Material		Equipment		Supplies		Total	
			UP	Total	UP	Total	UP	Total	UP	Total	UP	Total
Excavation	2000	cy	0.8	\$1,600	0	\$0	1.2	\$2,400	0	\$0	2.00	\$4,000
Backfill	2000	cy	8.95	\$17,900	0	\$0	4.2	\$8,400	0	\$0	13.15	\$26,300
Concrete	900	cy	120	\$108,000	150	\$135,000	20	\$18,000	30	\$27,000	320.00	\$288,000
Structural Steel	40	tn	0	\$0	0	\$0	0	\$0	20	\$800	20.00	\$800
Siding	10000	sf	1.75	\$17,500	2.5	\$25,000	0.75	\$7,500	0	\$0	5.00	\$50,000
40tn Bin	1	ea	2000	\$2,000	29700	\$29,700	1000	\$1,000	0	\$0	32,700.00	\$32,700
Komar Shreader	1	ea	15000	\$15,000	750000	\$750,000	5000	\$5,000	0	\$0	770,000.00	\$770,000
Electrical Lights	30	ea	400	\$12,000	600	\$18,000	0	\$0	0	\$0	1,000.00	\$30,000
DCS System	1	ea	5000	\$5,000	30000	\$30,000	0	\$0	0	\$0	35,000.00	\$35,000
<b>TOTAL</b>	<b>0</b>			<b>\$179,000</b>		<b>\$987,700</b>		<b>\$42,300</b>		<b>\$27,800</b>		<b>\$1,236,800</b>

**Total Construction with Contingency**

**\$1,731,520**

Three year O&M Cos      4500 hr      15      \$67,500

15      \$67,500 |      \$135,000

431.02  
06/29/2000  
Rev. 07

# ENGINEERING DESIGN FILE

Functional File No. \_\_\_\_\_  
EDF No. 1542  
Page 81 of 81

Option 4 - Mixing Basin												Date:	Est. By: JCG
Description	Quan	UM	Direct costs										
			Labor		Material		Equipment		Supplies		Total		
			UP	Total	UP	Total	UP	Total	UP	Total	UP	Total	
Excavation	1500		0.8	\$1,200	0	\$0	1.2	\$1,800	0	\$0	2.00	\$3,000	
Backfill	1500		8.95	\$13,425	0	\$0	4.2	\$6,300	0	\$0	13.15	\$19,725	
Concrete	750		120	\$90,000	150	\$112,500	20	\$15,000	30	\$22,500	320.00	\$240,000	
Structural Steel	30		360	\$10,800	1000	\$30,000	80	\$2,400	20	\$600	1,460.00	\$43,800	
Siding	8000		1.75	\$14,000	2.5	\$20,000	0	\$0	0	\$0	4.25	\$34,000	
Back-hoe W/Hydraulic	1	ea	0	\$0	80000	\$80,000	0	\$0	0	\$0	80,000.00	\$80,000	
Remote Operator	1	ea	0	\$0	70000	\$70,000	0	\$0	0	\$0	70,000.00	\$70,000	
Electrical lights	26	ea	400	\$10,400	600	\$15,600	0	\$0	0	\$0	1,000.00	\$26,000	
TOTAL	0			\$139,825		\$328,100		\$25,500		\$23,100		\$516,525	
Total with Contingency												\$723,135	

Three year O&M Cost	4500 hr	6.5	\$29,250	6.5	\$29,250	\$58,500
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